CLAIMS

1. A computer program product for facilitating processing within a computing environment, the computer program product comprising:

a computer-readable storage medium readable by a processing circuit and storing instructions for performing a method comprising:

obtaining an instruction to be processed, the instruction defined to be a vector string search instruction to locate occurrence of a sub string within a string;

processing the instruction, the processing comprising:

determining a mode for the searching, the searching including a non-zero-terminated search mode and a zero-terminated search mode, and the determining being based on whether a zero-search flag in a field of the instruction is set to indicate the zero-terminated search mode and that the string or substring can contain a zero termination that shortens the string or substring, respectively, for the searching in comparison to a length of the string or sub string, respectively, in the non-zero-terminated search mode;

searching the string specified in one operand of the instruction using the substring specified in another operand of the instruction, wherein the searching proceeds based on a length of the substring being a multiple of a size of elements within the string, the size being determined from a field of the instruction;

based on the searching locating a first full match of the substring within the string, returning a full match condition indication with position of the first full match in the string; and

based on the searching locating only a partial match of the substring at a termination of the string, returning a partial match condition indication with position of the partial match in the string.

2. The computer program product of claim 1, wherein the processing further comprises, based on the searching locating no-match of the substring within the string, returning a no-match condition indication with a search completion position of n, n being a length of the string in bytes.

3. The computer program product of claim 1, wherein the processing further comprises, based on the mode for the searching being the zero-terminated search mode, determining that the string includes the zero termination, and based thereon, setting a zero-termination found indicator.

4. The computer program product of claim 3, wherein the processing further comprises, based on the searching reaching the zero termination within the string without a match, terminating the searching and returning, with reference to the zero-termination found indicator, a no-match with zero termination condition indication, with a search completion position of n, n being a length of the string in bytes.

5. The computer program product of claim 3, wherein the determining further comprises determining that a length of the string before the zero termination within the string is smaller than the substring length, and based thereon, determining whether a portion of the substring matches the string before the zero termination.

6. The computer program product of claim 1, wherein the searching is based, in part, on the size of the elements within the string, the searching including element-based stepping through the string, wherein the size is selected from the group consisting of 1 byte, 2 bytes, or 4 bytes.

7. The computer program product of claim 1, wherein a string search instruction is an architected hardware machine instruction of an instruction set architecture.

8. The computer program product of claim 7, wherein the architected hardware machine instruction is the vector string search instruction.

9. A computer system for facilitating processing within a computing environment, the computer system comprising:

a memory; and

a processor coupled to the memory, wherein the computer system is configured to perform a method comprising:

obtaining an instruction to be processed, the instruction defined to be a vector string search instruction to locate occurrence of a sub string within a string;

processing the instruction, the processing comprising:

determining a mode for the searching, the searching including a non-zero-terminated search mode and a zero-terminated search mode, and the determining being based on whether a zero-search flag in a field of the instruction is set to indicate the zero-terminated search mode and that the string or substring can contain a zero termination that shortens the string or substring, respectively, for the searching in comparison to a length of the string or sub string, respectively, in the non-zero-terminated search mode;

searching the string specified in one operand of the instruction using the substring specified in another operand of the instruction, wherein the searching proceeds based on a length of the substring being a multiple of a size of elements within the string, the size being determined from a field of the instruction;

based on the searching locating a first full match of the substring within the string, returning a full match condition indication with position of the first full match in the string; and

based on the searching locating only a partial match of the substring at a termination of the string, returning a partial match condition indication with position of the partial match in the string.

10. The computer system of claim 9, wherein the processing further comprises, based on the searching locating no-match of the substring within the string, returning a no-match condition indication with a search completion position of n, n being a length of the string in bytes.

11. The computer system of claim 9, wherein the processing further comprises, based on the mode for the searching being the zero-terminated search mode, determining that the string includes the zero termination, and based thereon, setting a zero-termination found indicator.

12. The computer system of claim 11, wherein the processing further comprises, based on the searching reaching the zero termination within the string without a match, terminating the searching and returning, with reference to the zero-termination found indicator, a no-match with zero termination condition indication, with a search completion position of n, n being a length of the string in bytes.

13. The computer system of claim 11, wherein the determining further comprises determining that a length of the string before the zero termination within the string is smaller than the substring length, and based thereon, determining whether a portion of the substring matches the string before the zero termination.

14. The computer system of claim 9, wherein the searching is based, in part, on a byte size of the elements within the string, the searching including element-based stepping through the string, wherein the byte size is selected from the group consisting of 1 byte, 2 bytes, or 4 bytes.

15. A computer-implemented method of facilitating processing within a computing environment, the computer-implemented method comprising:

obtaining an instruction to be processed, the instruction defined to be a vector string search instruction to locate occurrence of a substring within a string;

processing the instruction, the processing comprising:

determining a mode for the searching, the searching including a non-zero-terminated search mode and a zero-terminated search mode, and the determining being based on whether a zero-search flag in a field of the instruction is set to indicate the zero-terminated search mode and that the string or substring can contain a zero termination that shortens the string or substring, respectively, for the searching in comparison to a length of the string or substring, respectively, in the non-zero-terminated search mode;

searching the string specified in one operand of the instruction using the substring specified in another operand of the instruction, wherein the searching proceeds based on a length of the substring being a multiple of a size of elements within the string, the size being determined from a field of the instruction;

based on the searching locating a first full match of the substring within the string, returning a full match condition indication with position of the first full match in the string; and

based on the searching locating only a partial match of the substring at a termination of the string, returning a partial match condition indication with position of the partial match in the string.

16. The computer-implemented method of claim 15, wherein the processing further comprises, based on the searching locating no-match of the substring within the string, returning a no-match condition indication with a search completion position of n, n being a length of the string in bytes.